State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER D-11-4
Relating to Exemptions under Section 27156
of the Vehicle Code

WESTERN CONTROLS, INC.
"BREAKERLESS TRANSISTOR IGNITION SYSTEM"

Pursuant to the authority vested in the Air Resources Board by Section 27156 of the Vehicle Code; and

Pursuant to the authority vested in the undersigned by Section 39515 of the Health and Safety Code and Executive Order G-30A;

IT IS ORDERED AND RESOLVED: That the installation of the "Breakerless Transistor Ignition System" manufactured by Western Controls, Inc., 805 West Madison, Phoenix, Arizona, 85007 and marketed as indicated below has been found to not reduce the effectiveness of required motor vehicle pollution control devices and, therefore, is exempt from the prohibitions of Section 27156 of the Vehicle Code for 1975 and older model year vehicles except as follows:

1) Those vehicles equipped with General Motors 4 cylinder engines.

2) Those vehicles equipped with General Motors, American Motors, Checker Motors, and International Harvester 6 cylinder engines.

3) Those vehicles equipped with Chrysler Corporation 4, 6 or 8 cylinder engines.

4) Those vehicles originally equipped with transistorized, capacitor discharge, breakerless ignition systems or dual point ignition systems where one of the points is used to retard timing for emission control.

5) Those 1966 through 1970 vehicles equipped with a retrofit NOx device which incorporates retard of basic ignition timing (i.e., Carter, Echlin, GRANCOR (STP) - Air Computer, AQP - Electro-NOx and Kar Kit.)

6) Mazda and Fiat vehicles.

The device consists of a magnetic sensor unit and an electronic transistor switching module.

The following is a list of marketing companies and the amplifier module number sold by each firm:

Marketing Organization	Amplifier Model Nos.
Western Controls Inc. 805 W. Madison St. Phoenix, AZ 85007	1058 TR System
"Max" Western Controls Inc. 805 W. Madison St. Phoenix, AZ 85007	1008 TR System
"Filkotronic Ignition" Filko Div. of F & B Mfg. 5480 N. Northwest Highway Chicago, Ill. 60630	F1-150 TR System
"Hays" Hays Sales 15116 Adams Street Midway City, CA 92655	TR-2048 TR System

The following is a list of magnetic sensor kit numbers and their application:

Magnetic Sensor Kit Number	Application
3050	Vauxhall - 4 and 6 cylinder
3051	AMC - 8 cylinder Checker - 8 cylinder GM - 8 cylinder Jeep - 8 cylinder
3056	Ford (English) - 4 cylinder Ford - 4 cylinder Ford - 8 cylinder Sunbeam - 8 cylinder
3057	A.C. (Great Britain) - 8 cylinder Ford - 8 cylinder (Dual Point) Ford - 6 cylinder

Magnetic Sensor Kit Number	Application
3065	Alpha Romeo - 4 cylinder Audi - 4 cylinder BMW - 4 and 6 cylinder Ford (German) - 4 cylinder Opel - 4 cylinder NSU - 4 cylinder Porsche - 4 and 6 cylinder Saab - 4 cylinder Volvo - 4 cylinder Volkswagen - 4 cylinder
3066	Alpha Romeo - 4 cylinder (1970-1972) Mercedes Benz - 4 and 6 cylinder Porsche - 4 and 6 cylinder Volvo - 4 and 6 cylinder
3067	Datsun - 4 and 6 cylinder Ford (72-74) - 4 cylinder Honda - 4 cylinder LUV - 4 cylinder Subaru - 4 cylinder
3068	Toyota 4 and 6 cylinder
3069	Aston Martin - 6 cylinder Austin - 4 and 6 cylinder Ford (English) - 4 cylinder Hillman - 4 cylinder Humber - 4 and 6 cylinder Jaguar - 6 cylinder Lotus - 4 cylinder M.G. - 4 and 6 cylinder Morgan - 4 cylinder Morris - 4 cylinder Riley - 4 cylinder Rover - 4 and 6 cylinder Singer - 4 cylinder Sunbeam - 4 cylinder Triumph - 4 and 6 cylinder

This Executive Order is valid provided that installation instructions for this device will not recommend tuning the vehicle to specifications different from those listed by the vehicle manufacturer.

Changes made to the design or operating conditions of the device, as exempted by the Air Resources Board, that adversely affect the performance of a vehicle's pollution control system shall invalidate this Executive Order.

Marketing of this device using an identification other than that shown in this Executive Order or marketing of this device for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from the Air Resources Board.

This Executive Order does not constitute any opinion as to the effect that the use of this device may have on any warranty either expressed or implied by the vehicle manufacturer.

THIS EXECUTIVE ORDER DOES NOT CONSTITUTE A CERTIFICATION, ACCREDITATION, APPROVAL, OR ANY OTHER TYPE OF ENDORSEMENT BY THE AIR RESOURCES BOARD OF ANY CLAIMS OF THE APPLICANT CONCERNING ANTI-POLLUTION BENEFITS OR ANY ALLEGED BENEFITS OF THE WESTERN CONTROLS' "BREAKERLESS TRANSISTOR IGNITION SYSTEM".

No claim of any kind, such as "Approved by Air Resources Board" may be made with respect to the action taken herein in any advertising or other oral or written communication.

Section 17500 of the Business and Professions Code makes untrue or misleading advertising unlawful, and Section 17534 makes violation punishable as a misdemeanor.

Section 43644 of the Health and Safety Code provides as follows:

> "43644. (a) No person shall install, sell, offer for sale, or advertise, or, except in an application to the State board for certification of a device, represent, any device as a motor vehicle pollution control device for use on any used motor vehicle unless that device has been certified by the State board. No person shall sell, offer for sale, advertise, or represent any motor vehicle pollution control device as a certified device which, in fact, is not a certified device. Any violation of this subdivision is a misdemeanor."

Any apparent violation of the conditions of this Executive Order will be submitted to the Attorney General of California for such action as he deems advisable.

Executed at Sacramento, California, this 16 day of July, 1976.

Original signed by
Thomas C. Austin
Deputy Executive Officer-Technical

State of California

AIR RESOURCES BOARD

Staff Report

May 3, 1976

Evaluation of Western Controls Inc.'s. "Breakerless Transistor Ignition System" for Exemption from the Prohibitions of Motor Vehicle Code Section 27156

I. Introduction

Western Controls Inc., 805 West Madison, Phoenix, Arizona, 85007 has applied (Exhibit I) for an exemption from the prohibitions of Motor Vehicle Code Section 27156 for their "Breakerless Transistor Ignition System".

The applicant is requesting an exemption to be granted for 1975 and older model year vehicles for the devices marketed as follows:

Marketing Organization	Amplifier Model Nos.
Western Controls Inc. 805 W. Madison St. Phoenix, AZ 85007	1058 TR System
"Max" Western Controls Inc. 805 W. Madison St. Phoenix, AZ 85007	1008 TR System
"Filkotronic Ignition" Filko Div. of F & B Mfg. 5480 N. Northwest Highway Chicago, Ill. 60630	F1-150 TR System
"Hays" Hays Sales 15116 Adams Street Midway City, CA 92655	TR-2048 TR System

II. System Description

The Western Controls "Breakerless Transistor Ignition System" is designed to replace the breaker points within a distributor. It consists primarily of a magnetic sensor and transistor switching module. The magnetic pickup unit senses the cam lobes of the distributor and triggers the electronic module which uses transistor switching instead of points to make and break the primary current to the ignition coil.

The amplifier (transistor switching module) units will be packaged separately and the magnetic sensor will be packaged as an adapter kit. The following adapter kit numbers and vehicle application are as follows:

Magnetic Sensor Kit Number	Application
3050	Vauxhall - 4 and 6 cylinder
3051	AMC - 8 cylinder Checker - 8 cylinder GM - 8 cylinder Jeep - 8 cylinder
3056	Ford (English) - 4 cylinder Ford - 4 cylinder Ford - 8 cylinder (Single Point) Sunbeam - 8 cylinder
3057	A.C. (Great Britain) - 8 cylinder Ford - 8 cylinder (Dual Point) Ford - 6 cylinder
3065	Alpha Romeo - 4 cylinder Audi - 4 cylinder BMW - 4 and 6 cylinder Ford (German) - 4 cylinder Opel - 4 cylinder NSU - 4 cylinder Porsche - 4 and 6 cylinder Saab - 4 cylinder Volvo - 4 cylinder Volkswagen - 4 cylinder

Kit Number	Application
3066	Alpha Romeo - 4 cylinder (1970-1972) Mercedes Benz - 4 and 6 cylinder Porsche - 4 and 6 cylinder Volvo - 4 and 6 cylinder
3067	Datsun - 4 and 6 cylinder Ford (72-74) - 4 cylinder Honda - 4 cylinder LUV - 4 cylinder Subaru - 4 cylinder
3068	Toyota 4 and 6 cylinder
3069	Aston Martin - 6 cylinder Austin - 4 and 6 cylinder Ford (English) - 4 cylinder Hillman - 4 cylinder Humber - 4 and 6 cylinder Jaguar - 6 cylinder Lotus - 4 cylinder M.G. - 4 and 6 cylinder Morgan - 4 cylinder Morris - 4 cylinder Riley - 4 cylinder Rover - 4 and 6 cylinder Singer - 4 cylinder Sunbeam - 4 cylinder Triumph - 4 and 6 cylinder

Other devices which were included in the original application but did not meet the criteria and were subsequently deleted from the application (See Exhibit II) are as follows:

Magnetic Sensor Kit Number	Application
3052	General Motors - 4 cylinder
3053	American Motors - 6 cylinder Checker Motors - 6 cylinder General Motors - 6 cylinder Jeep - 6 cylinder International Harvester - 6 cylinder
3055	International Harvester - 6 cylinder
3058, 3067, 3069, 4052	Chrysler - 4, 6, 8 cylinders (includes Dodge and Plymouth)

Exception is also taken to the application guide notes (Exhibit II) in that the drilling of location holes in the distributor vacuum advance plate or the grinding of cams is not acceptable.

III. System Evaluation

A. Applicants Test Data

The applicant submitted data for centrifugal and vacuum advance and electrical characteristics for the device when tested according to the SAE J973a test procedure. In order to evaluate the device the ignition system characteristics with and without the device are compared.

The data submitted was for a 1972 Chrysler 8 cylinder, 1972 General Motors 8 cylinder, 1972 Ford 8 cylinder, and 1969 Volkswagen 4 cylinder ignition systems. A data summary is presented as Tables

I and II. These results are considered within experimental and test variabilities and are evaluated as meeting the Air Resources Board's criteria for ignition system modifications.

B. ARB Confirmatory Test

Confirmatory tests were conducted by the Air Resources Board Laboratory on an ignition system simulator which consists of a Sun distributor tester, Tektronix Oscilloscope, Sun Ignition analyzer and associated accessories in accordance with SAE J973a instructions. A summary of electrical tests performed on Chrysler and Ford 8 cylinder distributors are shown in Table III.

The ARB data summary indicates a spark timing retardation in crankshaft degrees as follows:

	Centrifugal Retard	Vacuum Retard	Combined Retard
Chrysler	1.0° @ 3600 RPM	6.5 @ 20 in. Hg.	7.5°
Ford	2° @ 2600 RPM	2.5 @ 9, 12 & 15 in. Hg.	4.5°

The Air Resources Board tolerance on ignition timing is 0° advance and 4° maximum retard. The 4.5° degrees retard experienced with the 1967 Ford is considered within experimental and test variabilities and is evaluated as meeting the Air Resources Boards criteria of +0° to -4°.

The Chrysler data is clearly beyond the allowable tolerance. This degree of retardation is expected to have an adverse effect on the valve life of an engine. The deterioration of exhaust valve sealing leads to higher hydrocarbon emissions. The applicant was notified of the excessive retardation and has amended (Exhibit II) his application to omit all Chrysler 6 and 8 cylinder and General Motors 4 and 6 cylinder vehicles.

It was noted that the device did cause an increase in coil primary current on both the 1972 Chrysler and 1967 Ford application at the 600 RPM idle condition as follows:

Ignition Primary Current Amperes

	1972 Chrysler	1967 Ford
Baseline	2.1	2.5
Device	3.1	3.3

This condition can cause some increased heating of the ignition coil at idle, however this is not considered to be critical. The data on energy and spark duration are judged as meeting the Air Resources Board criteria.

The ARB laboratory tests also indicated that the device was compatible with 1966-1970 NOx retrofit devices using electronic speed sensors.

IV. Manufacturer's Claims

The manufacturer stated the purpose of the device is to retrofit breaker point ignition systems but makes no performance claims in the application. It is the staff's judgement that the installation of the device on a vehicle could result in the following:

1. This breakerless system offers potential for reduced maintenance.
2. The electrical characteristics of this system do not indicate any significant benefit on performance, economy or emission reduction than would be obtained from a properly tuned engine.

V. Conclusions and Recommendations

It is the opinion of the staff that Western Controls' "Breakerless Transistor Ignition System" may reduce the effectiveness of required emission control systems by increasing the likelihood of premature exhaust valve burning caused by the device's retardation of OEM timing schedules on certain vehicles.

Therefore, it is recommended that Western Controls be granted an exemption from the prohibitions of Vehicle Code Section 27156 for its "Breakerless Transistor Ignition System" for 1975 and older model year vehicles except as follows:

1) Those vehicles equipped with General Motors 4 cylinder engines.

2) Those vehicles equipped with General Motors, American Motors, Checker Motors, and International Harvester 6 cylinder engines.

3) Those vehicles equipped with Chrysler Corporation 4, 6 or 8 cylinder engines.

4) Those vehicles originally equipped with transistorized, C.D., breakerless ignition systems or dual point ignition systems where one of the points is used to retard timing for emission control.

5) Those 1966 through 1970 vehicles equipped with a retrofit NOx device which incorporates retard of basic ignition timing (i.e., Carter, Echlin, GRANCOR (STP) - Air Computer, AQP - Electro-NOx and Kar Kit.)

6) Mazda and Fiat vehicles.

Table I - Western Controls, Inc. Ignition System Data Summary

A. Centrifugal Spark Advance in Crankshaft Degrees

Engine RPM	1972 Chrysler - 8 cylinder		1972 Oldsmobile - 8 cylinder	
	Baseline	Device	Baseline	Device
600	0	0	0	0
1400	17	16	4	2
2000	20	19	7	6
2600	24	21	9	8
3000	26	25	12	11

B. Vacuum Spark Advance in Crankshaft Degrees

Vacuum in. Hg.	Baseline	Device	Baseline	Device
3	0	0	0	0
6	0	0	0	0
9	0	0	4	4
12	9	7	8	8
15	14	14	12	12
20	15	15	20	20

C. Spark Duration in Microseconds

Engine RPM	Baseline	Device	Baseline	Device
600	1500	1600	2000	1900
2000	1600	1800	1600	1800

D. Secondary Voltage Rise Time in Microseconds

Engine RPM	Baseline	Device	Baseline	Device
600	125	110	100	100
2000	120	113	100	105

E. Spark Energy in Millijoules

Engine RPM	Baseline	Device	Baseline	Device
600	25.9	28.8	32.0	32.8
2000	27.6	31.7	26.9	27.0

F. Available Voltage in Kilovolts (with load)

Engine RPM	Baseline	Device	Baseline	Device
600	24	24	27.5	25
2000	24	24	23.0	23.5

Table II - Western Controls, Inc. Ignition System Data Summary

A. Centrifugal Spark Advance in Crankshaft Degrees

Engine RPM	1972 Ford - 8 cylinder		1969 Volkswagen - 4 cylinder	
	Baseline	Device	Baseline	Device
600	1.0	1.0	0	0.4
1400	16.0	15.0	0.4	0.4
2000	21.0	20.0	12.0	9.0
2600	21.0	20.0	16.2	13.4
3000	21.0	20.0	17.0	14.0
3400	21.0	20.0	17.2	14.2
4000			20.0	17.0

B. Vacuum Spark Advance in Crankshaft Degrees

Vacuum in. Hg.	Baseline	Device	Baseline	Device
3	1.0	1.0	0	0
6	8.0	7.0	5.4	5.4
9	14.0	14.0	10.0	10.0
12	18.0	18.0	12.0	12.0
15	22.0	22.0	12.0	12.0
20	23.0	24.0	12.0	12.0

C. Spark Duration in Microseconds

Engine RPM	Baseline	Device	Baseline	Device
600	1600	1900	1950	1000
2000	2000	2000	*1900	1000

D. Secondary Voltage Rise Time in Microseconds

Engine RPM	Baseline	Device	Baseline	Device
600	120	88	45	47
2000	80	90	*47	47

E. Spark Energy in Millijoules

Engine RPM	Baseline	Device	Baseline	Device
600	24.5	29.1	23.9	24.0
2000	31.5	31.5	*22.8	24.0

F. Available Voltage in Kilovolts (with load)

Engine RPM	Baseline	Device	Baseline	Device
600	25	24	22.5	19
2000	24	23	*22.0	20

*Tested at 3000 RPM.

Table III - ARB Data Summary for Western Controls "Breakerless Transistor Ignition System"

A. Centrifugal Spark Advance in Crankshaft Degrees

	1967 Ford - 8 Cylinder		1972 Chrysler - 8 Cylinder	
Engine RPM	Baseline	Device	Baseline	Device
600	0	0	0	0
1400	11.5	11.0	18.5	18.0
2000	16.0	15.5	20.5	20.0
2600	19.0	17.0	22.5	22.0
3200	20.5	19.5	24.5	24.0
3600	22.0	20.5	26.0	25.0

B. Vacuum Spark Advance in Crankshaft Degrees

Vacuum in. Hg.	Baseline	Device	Baseline	Device
3	0	0	0	0
9	11.0	8.5	1.0	0
12	16.5	14.0	10.0	7
15	20.5	18.0	21.0	15
20	24.0	22.0	21.5	15

C. Spark Duration in Microseconds

Engine RPM	Baseline	Device	Baseline	Device
600	1450	1300	1800	1800
3000	1000	1000	1300	1200

D. Secondary Voltage Rise Time in Microseconds

Engine RPM	Baseline	Device	Baseline	Device
600	40	30	40	30
3000	40	35	40	30

E. Spark Energy in Millijoules

Engine RPM	Baseline	Device	Baseline	Device
600	19.0	22.2	27.2	28.5
3000	16.8	17.5	25.6	22.0

Table III (Continued)

F. Available Voltage in Kilovolts (with load)

Engine RPM	Baseline	Device	Baseline	Device
600	23.5	22.0	25.0	24
3000	21.0	17.5	19.0	19

G. Available Voltage in Kilovolts (Simulating fouled spark plugs)

Engine RPM	Baseline	Device	Baseline	Device
600	18.5	16.0	20	19
3000	16.0	12.0	13	12.5

EXHIBIT I

October 23, 1975

Mr. G. C. Hass
Division of Vehicle Emissions Control
Air Resources Board
9528 Telstar Avenue
El Monte, Calif. 91713

Dear Mr. Hass:

We respectfully request that you review the attached data and if satisfactory issue exemption status for the Western Controls Transistor Ignition Model 1058 and Filkotronic Model FI-150.

Enclosed is baseline test data and devise test data. All measurements per SAE J973A. High voltage measurements were made per SAE AIR 84A as specified in SAE J973A paragraph 6.1.

Materials for evualtion are OEM replacement parts specified below.

Chrysler Corp:	Ballast Resistor	2775590
	coil	2495531
Delco Remy:	Ballast Resistor	1957154
	coil	1115238
Ford Motor Co:	Ballast Resistor	COLF 12250-A
	coil	BGA 12029-B

Additional data is supplied to verify engine timing to be within specification for all engine distributors including foreign makes.

No data from road tests involving late model vehicles was recorded as Western Controls Model 1058 Transistor Ignition system spark energy levels equaled or exceeded all OEM standard ignition energy levels under road conditions--no misfires were encountered.

Western Controls system Model 1058 encorporates a ballast resistor shunt of 10 ohm to make up for transistor voltage drop. This is wired directly across the existing ballast resistor.

Sincerely,

Charles L. Shano

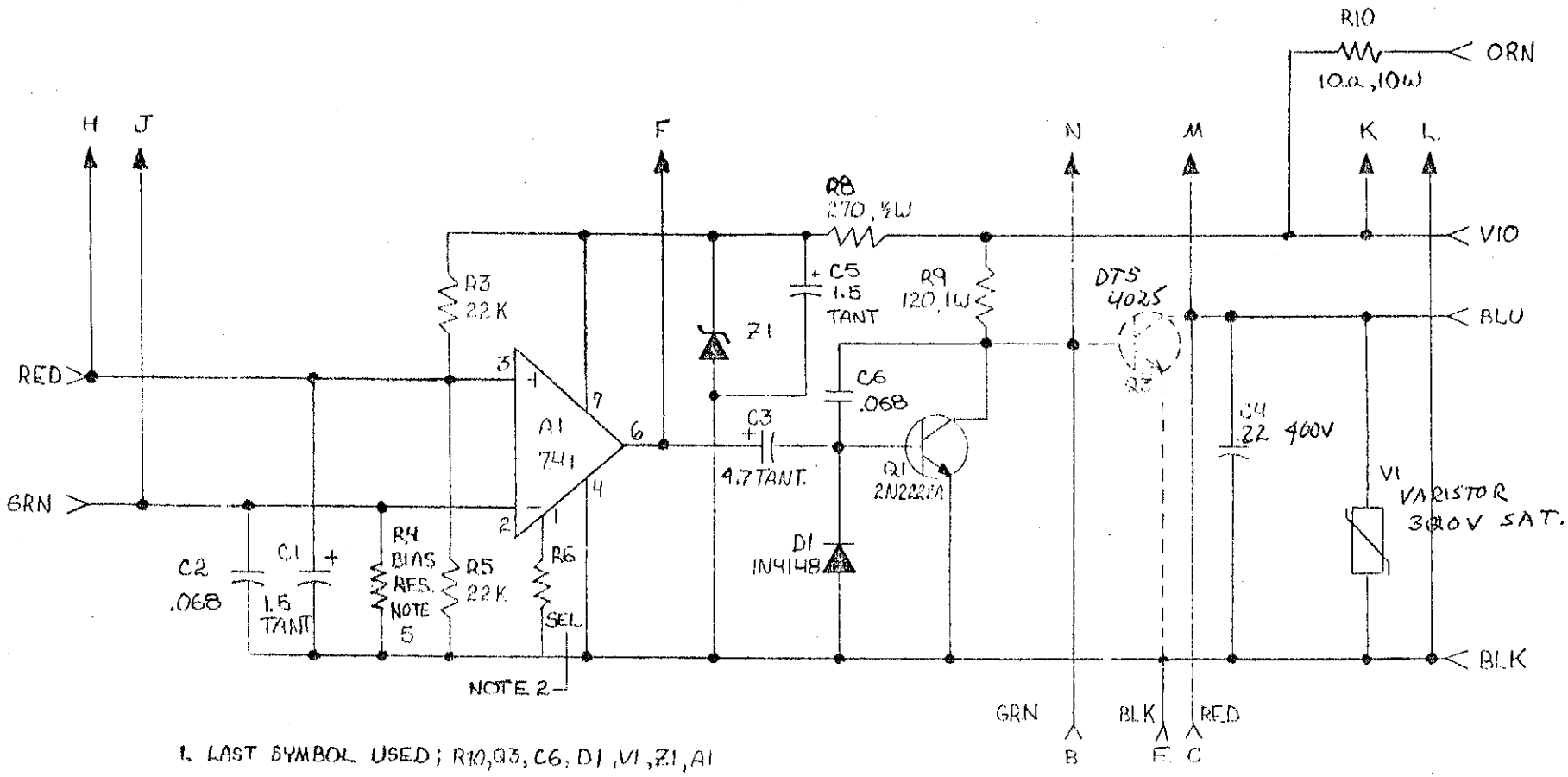
Charles L. Shano

CLS/tm

encl:

western controls, inc. 805 WEST MADISON, PHOENIX, ARIZONA 85007 (602) 258-2821

REV 9-2775
REV 12-9-75



1. LAST SYMBOL USED; R10, Q3, C6, D1, V1, Z1, A1
2. MATCHED WITH IC AS PER TA 141 130.
3. ALL RESISTORS ARE ¼W, 5% UNLESS OTHERWISE SPECIFIED.
4. ALL CAPACITOR VALUES ARE IN MICROFARADS.
5. MATCHED WITH IC.
6. SYMBOLS NOT USED Q2, R1, R2, R7

western controls. inc.
PHOENIX, ARIZONA

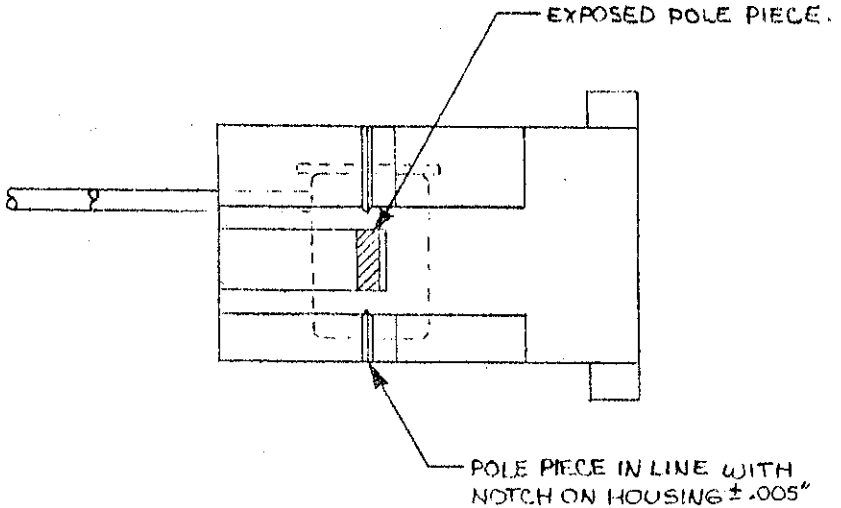
SCALE —	TOLERANCE: UNLESS OTHERWISE SPECIFIED .xx = .xxx = fraction =	FINISH: —

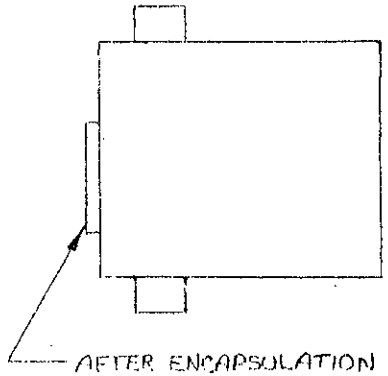
INITIALS	DATE
DWN	
CHKD	
APPVD	

USED ON 1009 | NEXT ASSEMBLY 1008-2

DWG TITLE: SCHEMATIC | DWG NO: 1008-1

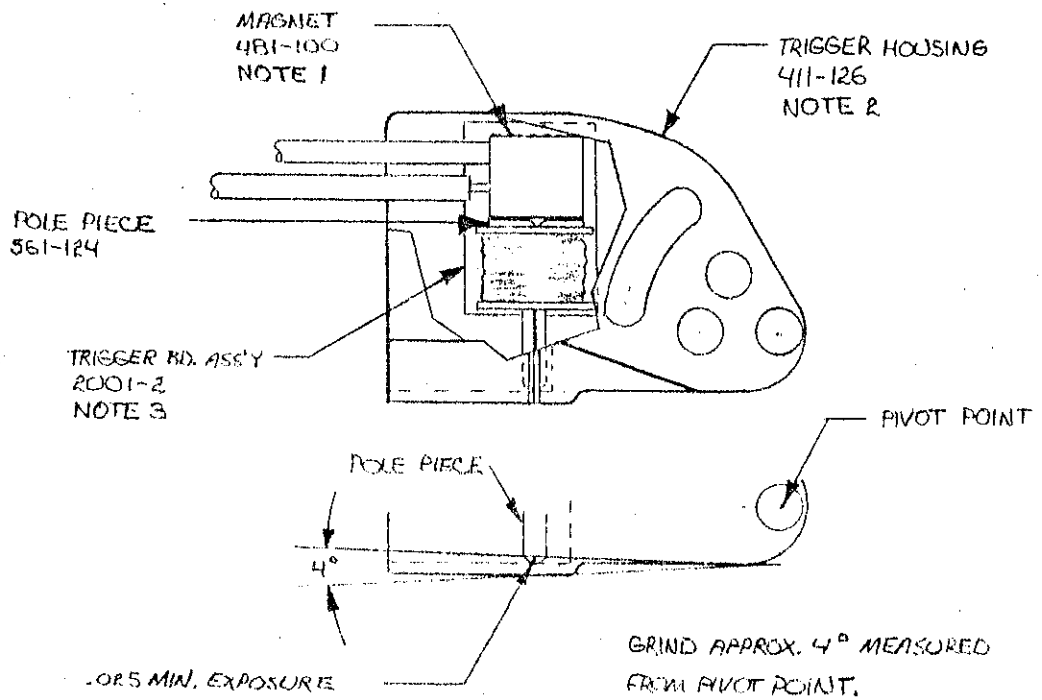
EXHIBIT 1





NOTES:

1. POSITION MAGNET TO POLE PIECE ON TRIGGER BD. FLAT SURFACE TOWARD POLE PIECE.
2. FILL TRIGGER HOUSING ½ FULL WITH THERMOSET DC 568 MIX 2% HYSOL BLK COLOR DISPERSION.
3. INSERT BD. ASS'Y INTO HOUSING, POLE PIECE SHOULD BE IN LINE WITH NOTCH ON HOUSING.
4. ADD DC 568 TO FILL HOUSING, CURE AT 250°F FOR 3 HRS.
5. TRIGGER POLARITY: RED POS REL. TO BRN. WITH FERROUS METAL PROBE MOVED AWAY FROM POLE TIP (INCREASING AIR GAP).



western controls. inc.			
PHOENIX, ARIZONA			
SCALE	TOLERANCE: .xx = UNLESS OTHERWISE .xxx = SPECIFIED fraction =		FINISH:
INITIALS / DATE	This drawing contains designs and other information which are the Property of Western Controls Inc. This drawing may not, in whole or in part, be duplicated or disclosed or exhibited or used for manufacture of the part without prior written permission of Western Controls Inc.		
DWN T.P. 10-29-81			
CHKD [illegible]			
APPVD [illegible]	USED ON 2001	NEXT ASSEMBLY NONE	
DWG TITLE TRIGGER FINAL ASSEMBLY		DWG NO 2001-3	

EXHIBIT 1

BREAKERLESS TRANSISTOR IGNITION

EXHIBIT I

INSTALLATION INSTRUCTIONS

1. Mount the trigger unit in the distributor using the instructions and material in the adapter kit and hardware bag.

2. Mount the Transistor Electronic Switch Unit in a cool location away from the exhaust manifold. Be certain the harness will reach the distributor and ignition coil connections.

   Mount the unit with 3 #12 sheet metal screws. Use the unit base as a template and punch or drill the screw holes with a 5/32" bit.

3. Disconnect the breakerpoint wire from the - negative terminal "Dist" of the ignition coil. Do not remove the tachometer wire or radio suppression condenser if connected.

   Connect the Blue wire from the unit to this terminal. Ford engines, use the #10 nut supplied with the adapter kit. Ignition coils with push-on terminals, use the mating terminal supplied. Securely crimp a mating push-on terminal to the Blue wire after removing the fork terminal.

4. Connect the Black wire to engine electrical ground. Secure under a coil mounting bolt, head bolt or other convienient place in contact with the engine block.

5. Connect the Violet wire to the positive "BAT" terminal of the ignition coil. Use the wire tapper supplied for a convienient, simple connection. See diagram.

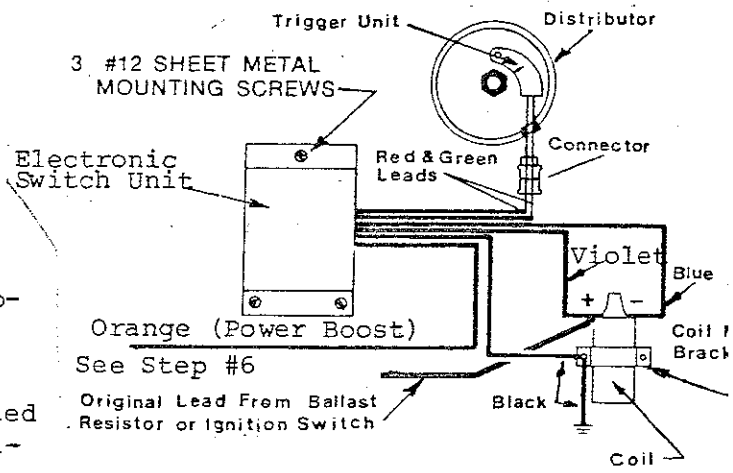
6. Connect the Orange (Power Boost) wire to an accessory power connection that is turned on and off with the ignition switch. A convienient connection point can be found at the fuse block, ignition switch side of the ballast resistor or the wire to the anti-dieseling solenoid near the carburetor. Use the remaining wire tapper for this connection.

7. Push the red leadwire from the Trigger Unit into the connector half containing the red leadwire from the Amplifier, and the green lead from the Trigger Unit to the connector half containing the green Amplifier lead. Make sure to match red to red and green to green, see illustration.

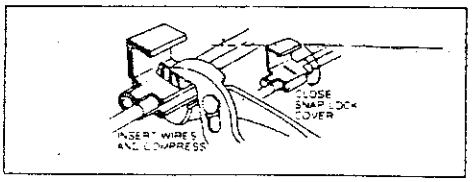
   Now separate the connector halves and firmly push the Trigger leads into the holes until a snap is felt. Then, reconnect the connector halves.

8. Time engine to manufacturer's specifications. Reset sparkplug gap to specifications. Inspect secondary wiring for heat hardening or cracking. Replace if necessary. Dress the Amplifier and Trigger Unit leads for a neat installation.

Wiring Steps 2 through 6.



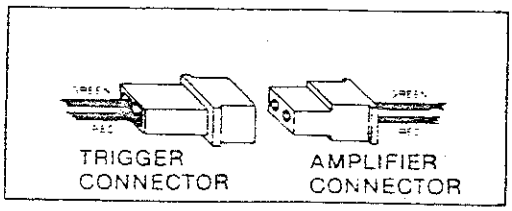
HOW TO INSTALL SELF-STRIPPING ELECTRICAL TAP CONNECTORS



NOTE:

This ignition system will operate wit the Orange wire not connected. Its purpose is to increase the available voltage at the sparkplugs providing longer plug life and greater resistance to fouling than other ignition systems of this type. The connection is required on California cars and trucks.

Connector Wiring — Step #7



WC western controls, inc.

BREAKERLESS IGNITION

TRIGGER UNIT INSTALLATION
ADAPTOR KIT NO. 3058

6 AND 8 CYLINDER CHRYSLER ENGINES

IMPORTANT

THE 383 AND 440 ENGINE DISTRIBUTORS ROTATE IN THE COUNTERCLOCKWISE (CCW DIRECTION. OTHER ENGINES SUCH AS THE SLANT 6 AND 318 ROTATE IN THE CLOCKWISE (CW) DIRECTION. BE SURE TO DETERMINE THE DISTRIBUTOR SHAFT ROTATION DIRECTION TO CORRECTLY INSTALL THE TRIGGER UNIT.

( ) 1. Remove the distributor cap, rotor, condenser and leadwire.

( ) 2. Install the adapter plate as shown in figure 1. Use the 8-32 flat head screw provided and tighten securely.

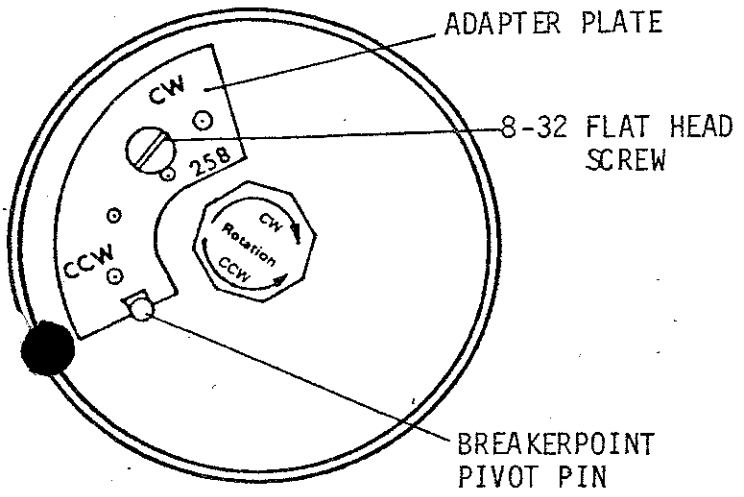


FIGURE 1

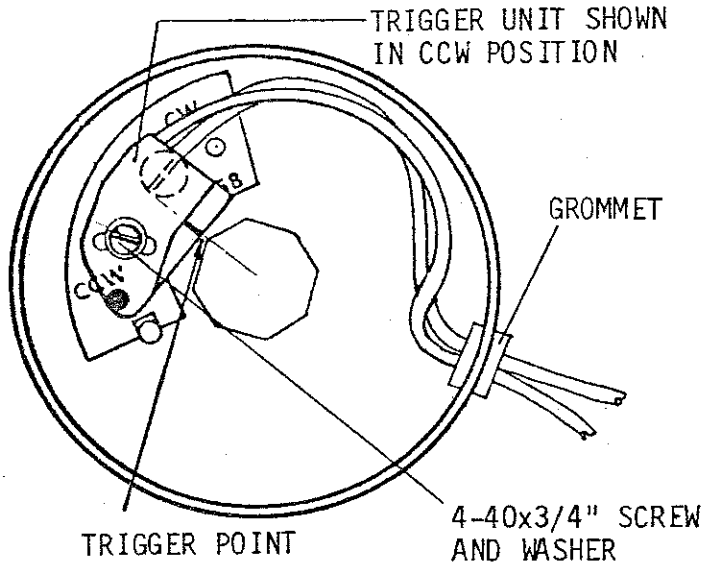


FIGURE 2

( ) 3. Install the trigger unit with the 4-40x3/4" screw and compression washer. Do not tighten the screw yet. Be sure the trigger unit is in the correct holes for the rotation direction of the distributor. See figure 2.

( ) 4. Crank or rotate the engine so that a peak on the distributor cam is opposite the trigger point.

( ) 5. Set the gap between the cam peak and the trigger point to .010 ± .004 inches. Insert a feeler gauge and tighten the screw while pressing against the side of the trigger unit.

( ) 6. Insert the rubber grommet into the hole in the distributor wall. Run the trigger wires through the grommet. Drape the wires inside the distributor as shown in the figure.

( ) 7. Examine the distributor cap and rotor for cracks and wear. Replace if needed. Install the cap and rotor. Proceed to the main instruction sheet.

Exhibit II

April 27, 1976

Mr. K. D. Drachand
Chief Vehicle Compliance
California Air Resources Labr.
9528 Telstar Avenue
El Monte, Calif. 91731

Dear Mr. Drachand:

Thank you for your letter of April 5, 1976. We would like to accept the alternative restrictions you have proposed for breakerless transistor ignition system and omit all Chrysler and all 4 and 6 cylinder General Motors from the exemption list.

Enclosed is a copy of our adapter kit guide showing all vehicles not exempted with asterisk. The asterisk refers to a note #8 on the back page of the guide.

A bold fact type statement on the front cover will call attention to the California requirements.

Please review the marked up application guide to see that it meets your requirements and advise me if any changes are necessary.

Yours Sincerely,

Charles L. Shano

CLS/ts

encl:

Exhibit II

July 6, 1976

Mr. Mitch Luczynski
California Air Resources Board
9528 Telestar Avenue
El Monte, Calif. 91731

Dear Mr. Luczynski:

Please note that Western Controls Inc. will completely eliminate all reference to notes 1 through 4 on the application guide. The guide with corrections will be printed and circulated as soon as exemption is obtained.

For your exemption statement please refer to Western Controls application guide No. AG551-303 effective August 1, 1976.

Sincerely,

Charles L. Shano

CSL/ts

western controls. inc.

805 WEST MADISON • PHOENIX, ARIZONA 85007
(602) 252-4927

SERIES 3000
ADAPTER KITS

APPLICATION GUIDE
FOR ALL
BREAKERLESS ELECTRONIC IGNITION SYSTEMS

All trigger units for WESTERN CONTROLS BREAKERLESS IGNITION SYSTEMS can be installed quickly and easily with the Adapter Kits listed in this guide. There is a suitable adapter kit for virtually every domestic and imported engine. The tables list the proper kit to be used with passenger cars, trucks and bussess, lift trucks, tractors, farm equipment and industrial engines.

All adapter kits are supplied with necessary hardware and detailed installation instructions.

CONTACT FACTORY FOR APPLICATIONS NOT LISTED.

INDEX:
1 - Passenger Cars & Light Trucks
2 - Trucks & Busses
3 - Lift Trucks
4 - Tractor & Farm Equipment
5 - General Guide for Industrial Engines
6 - Application Guide Notes

CALIFORNIA VEHICLES

Some of the ignition system applications are not exempt from prohibition. For details see note #4 on the back cover of this guide. This prohibition applies to all highway applications of makes and models marked with * asterisk.

Exhibit II

PASSENGER CARS AND LIGHT TRUCKS

YEAR & MAKE	CYL.	MODEL	KIT NO.
A. C.	8	Cobra	3057
~~Bristol & Others~~			~~(Note 1)~~
ALFA ROMEO			
68 - 69	4	1750 Berlina, Spyder Veloce, GTV Dist. No. 0231129034	3065
[redacted]	4	1750 Berlina, Spyder, Coupe Dist. No. 0231112070	3066
[redacted]74	4	2000 Berlina, GT & Spyder Veloce Dist. No. 0231129036	3065
~~All Others~~			~~(Note 1)~~
AMERICAN MOTORS			
57 - 74	8	All	3051
* 63 - 74	6	All SEE NOTE #4	3053
ASTON MARTIN			
66 - 68	6	DB6 & Vantage, Volante	3069
67 - 74	6	DBS	3069
~~All other~~			~~(Note 1)~~
AUDI			
65 - 75	4	All	3065 ~~(Note 6)~~
AUSTIN (AUSTIN-HEALEY)			
~~65 - 67~~	~~4 & 6~~	~~A-50, 55, 59, 105, Healey 100 M, S, 100 S, 3000~~	~~(Note 1)~~
~~67~~	~~6~~	~~Healey 3000 (Dist. No. 40662D)~~	~~(Note 7)~~
~~67 - 69~~	~~4~~	~~Healey Sprite~~	~~(Note 1)~~
56 - 74	4 & 6	All ~~not listed above~~	3069
~~All others~~			~~(Note 1)~~
BMW			
65 - 75	4 & 6	All using Bosch Pts. (1-237-013-044, 057, 062) and similar (1 piece pt. set)	3065
~~All Others~~			~~(Note 1)~~
BUICK		See General Motors	
CADILLAC		See General Motors	
CAPRI		See Ford Motor Co.	
CHECKER			
57 - 74	8	All	3051
* 63 - 74	6	All SEE NOTE #4	3053
CHEVROLET		See General Motors	
[redacted]			
* CHRYSLER CORP.		NOTE 2	
62 - 72	6 & 8	All	3058
72 - 75	6 & 8	With Elec. Ign. SEE NOTE #4	~~3052 (Note 3)~~
71 - 75	4	Colt	3067
71 - 72	4	Cricket	3069
CORVETTE		See General Motors	
COURIER		See Ford Motor Co.	
DATSUN			
66 - 67	4	410, 411	3067
67 - 75	4	All W/single pt. set	3067
71 - 74	6	240Z, 260Z, W/Manual Trans.	3067 (Note 5)
All others	4 & 6	W/o Elec. Ign. (6 cyl. only - Note 5)	(Note 5)
75	6	With Elec. Ign	(Note 5 & 6)
* DODGE		See Chrysler Corp.	
~~FIAT~~		~~All except Brazilian Dist.~~	~~(Note 1, 2, 3)~~
FORD (ENGLISH)			
66 - 67	4	Anglia, Cortina (Dist. No. C6AH)	3056
67 - 71	4	Cortina (Lucas Dist.)	3069
		(Ford Dist)	3056
65 - 71	4	All not listed Above	3069
60 - 62	4	Anglia, Classic, Capri, Consul, Cortina, Prefect	3069
63 - 64	4	" " " " " Corsair	3069
~~All others~~			~~(Note 1)~~
FORD (GERMAN)			
67 - 68	4	Taunus	3065
~~All Others~~			~~(Note 1)~~
FORD MOTOR CO.			
57 - 74	8	All except Dual Point	3056 (Note 3)
57 - 74	8	All Dual Point	3057 (Note 3)
57 - 74	6	All except V-6	3057
75	4, 6 & 8	All W/Elec. Ign.	4053 (Note 3 & 5)
73 - 74 (72 - 74 Calif.)	4	Courier	3067
~~72~~	~~4~~	~~Courier (with Dual Pts.)~~	~~(Note 1)~~
Capri, Mustang II, Pinto			
73 - 74	V-6	All	3065 (Note 3)
71 - 74	4	2000 cc	3065
71 - 74	4	1600 cc, 2300cc	3056
[redacted]	4 & V-6	W/o Elec. Ign.	(see proper '74 model)
GENERAL MOTORS CORP.			
57 - 74	8	All	3051
* 63 - 74	6	All except V-6 (SEE NOTE #4)	3053
68 - 74	V-6	All (without window in dist. cap)	3053
* 63 - 74	4	Except LUV & Opel (SEE NOTE #4)	3052
66 - 75	4	Opel	3065
~~72 - 75~~	~~4~~	~~LUV (Type 1 &2)~~	~~(Note 1)~~
73 - 75	4	LUV (Type 3)	3067

YEAR & MAKE	CYL.	MODEL	KIT NO.
HILLMAN			
~~66 - 69~~	~~4~~	~~Minx, Super Minx (Dist. 41613A)~~	~~(Note 1)~~
~~59 - 59~~	~~4~~	~~Husky (High Compression)~~	~~(Note 1)~~
58 - 69	4	All not listed above	3069
~~All others~~			~~(Note 1)~~
HONDA			
73 - 75	4	Civic	3067
HUMBER			
63 - 68	4	Super Snipe	3069
63 - 69	4	Sceptre (Dist. No. 40799A, B; 40942A; 41125A, 51A)	3069
68	4	Hawk	3069
65 - 68	6	Imperial	3069
~~All others~~			~~(Note 1)~~
JAGUAR			
63 - 64	6	MKX Saloon, XKE	3069
65 - 75	6	All	3069
72 - 75	V12	All	~~(Note 6)~~ NOTE 2
~~All others~~			~~(Note 1)~~
INTERNATIONAL HARVESTER		See Truck and Bus Guide	
JEEP			
68 - 74	V-6	Late model Distributors W/o adjustment window	3053
* 66 - 74	6	All except V-6 SEE NOTE #4	3053
66 - 74	8	All	3051
~~57 - 74~~	~~4, 6 & 8~~	~~All others models~~	~~(Note 1)~~
LINCOLN		See Ford Motor Co.	
LOTUS			
70 - 73	4	ELAN + 2, 5, 45, 130S, Sprint	3069
LUV		See General Motors	
MERCEDES - BENZ			
68 - 72	4	220 Using Bosch Pts. (1-237-013-059, 061, 062, 082)	3066
70 - 73	6	280 SE (Using Bosch Pts. above)	3066
70 - 72	6	280 SL/8 (Using Bosch Pts. above)	3066
64 - 74		All others	~~(Note 6)~~ NOTE 2
MERCURY		See Ford Motor Co.	
M. G.			
56 - 59	4	Midget; Magnette; MGA 1500, 1600	3069
60 - 75	4 & 6	All	3069
MORGAN			
59 - 67	4	All	3069
58	4	Plus Four	3069
MORRIS			
59 - 71	4	All	3069
56 - 58	4	Oxford, Cowley, Minor	3069
MUSTANG		See Ford Motor Co.	
NASH			
55 - 64	4	Metropolitan	3069
NSU			
67 - 72	4	All	3065
~~All others~~			~~(Note 1)~~
OLDSMOBILE		See General Motors	
OPEL		See General Motors	
PINTO		See Ford Motor Co.	
* PLYMOUTH		See Chrysler Corp.	
PONTIAC		See General Motors	
PORSCHE			
67	6	911	~~(Note 6)~~ NOTE 2
68 - 71	6	911	3066
67 - 69	6	911S	~~(Note 6)~~ NOTE 2
68 - 70	6	911T	3065
68 - 72	4	912	3066
70 - 71	4	914/4	3065
70 - 72	4	914 (W/411E engine) Dist. 0-231-174-001 0-231-174-002	3065 ~~(Note 6)~~ NOTE 2
73 - 75	4	914	3065
72 - 74	6	911 Series	3066
RILEY			
56 - 70	4	All except 57 - 58 2.5 & 59 - 60 2.6	3069
~~61 - 69~~	~~4~~	~~Elf & Kelf~~	~~(Note 1)~~
ROVER			
64 - 74	4 & 6	All	3069
56 - 63	4	Landrover	3069
59 - 63	4	80	3069
63	4	2000	3069
~~All others~~			~~(Note 1)~~
SAAB			
66 - 70	4	95V4, 96V4	3065
70 - 74	4	99E, EA, EMS	3065
68 - 72	4	Sonnet	3065
~~All others~~			~~(Note 1, 2, 6)~~
SINGER			
59 - 70	4	All except early '68 Gazelle	3069
~~All others~~			~~(Note 1)~~
SUBARU			
69 - 74	4	1000, 1100, 1300 S	3067

Exhibit II

PASSENGER CARS AND LIGHT TRUCKS

YEAR & MAKE	CYL.	MODEL	KIT NO.
SUNBEAM			
56 - 70	4	All except 56 - 59 Saloon	3069
66 - 67	8	Tiger (Ford V-8)	3056
THUNDERBIRD		See Ford Motor Co.	
TOYOTA			
66 - 75	4 & 6	All w/o Elec. Ign.	3068
75	4 & 6	With Elec. Ign.	NOTE 2
TRIUMPH			
65 - 70	4	Spitfire (Delco Ignition)	3050
63 - 70	6	Vitesse w/Delco Ignition	3050
		w/Lucas Ignition	3069
56 - 75	4 & 6	All not listed above	3069

YEAR & MAKE	CYL.	MODEL	KIT NO.
VAUXHALL			
57 - 58	4	Wyvern	3069
57 - 66	4	Envoy, Victor, Super, Estate Wagon	3050
63 - 68	4	Viva	3050
58 - 66	6	Velox, Cresta	3050
VOLKSWAGON			
68 - 75	4	All except 1970 & 71 411E & EL	3065
VOLVO			NOTE 2
62 - 68	4	All	3066
68 - 69	4	142S, 144S, 145S, 1800S	3066
68 - 74	6	164	3066
69 - 74	4	All not listed above	3065

TRUCKS AND BUSSES

MAKE & YEAR	CYLINDERS	MODEL	W-C KIT No.
AMERICAN LAFRANCE			
59 - 64	6	All	3055 (Note 3)
60 - 64	8	All	3050
48 - 64	12	All 12 volt	3050
AUTO CAR			
54 - 60	6	All 12 volt	3055 (Note 3)
53 - 57	6	All 12 volt	3050
BROCKWAY			
49 - 67	6	All 12 volt	3061 (Note 3)
CHEVROLET			
56 - 74	8	All except with Delco D-103 pts	3051
* 63 - 74	6	All SEE NOTE #4	3053
* 63 - 74	4	All except LUV	3052
LUV		See "Passenger Cars and Light Trucks Guide"	
DIAMOND T (REO)			
72	8	230 LPG, OV-250	3057
72	6	6-200	3057
72	6	6-130, 145, 162, 169, 190	3062
67 - 71	6	6-142, 162, 170, 186, 190, 200 (w/1510 Dist.)	3062
67 - 71	8	1308, 1456, 235	
		with D-4141 A, D-4292 AAS Dist.	3062
		with D-2475-1A Dist.	3057
57 - 71	8	OV-195, 207, 235	
		with 1110620, 21, 23, 31, 32, 33 Dist.	3050
		with 1111660, 61 Dist.	3051
DIVCO			
55 - 65	4	All	3054 (Note 3)
60 - 65	6	Continental Engines	3050
55 - 60	6	Nash Engines	3050
62 - 65	6	All others	3055 (Note 3)
DODGE TRUCK			
62 - 73	6 & 8	with Chrys. Dist; w/o Elec. Ign.	3058
69 - 73	8	with 361-764-C1, 2932887, 3620771, 760-711A Point sets	3062
62 - 67	6	with Autolite Dist.	
63 - 67	8	with Autolite Dist.	
70	8	with Chrys. Dist. 287576, 77	
61	8	with Chrys. Dist. 2095270, 1889750	3058
72 - 75	6 & 8	All w/Elect. Ign.	(Note 2)

MAKE & YEAR	CYLINDERS	MODEL	W-C KIT No.
FLEXIBLE			
58 - 66	6	All	3055 (Note 3)
FORD			
58 - 74	8	All	3056
56 - 74	6	All	3057
75	6 & 8	All w/Elect. Ign.	4053 NOTE 2
GMC COACH AND TRUCK			
65 - 72	6	All	3053
55 - 64	6	All	3055 (Note 3)
55 - 64	4	On Refrigeration Engine	3054 (Note 3)
57 - 74	8	All	3051
* 63 - 74	6	All Except V-6 SEE NOTE 5	3053
65 - 74	V-6	All Except Dist. 1110 277	3053
60 - 66	12	All	3072
INTERNATIONAL HARVESTER			
With Delco Distributor			
61 - 64	4	Scout 152	3051
* 67 - 74	6	All except w/pt. sets D-100, 111, 105, 105P	3053
* 67 - 74	6	w/pt. D-100, 111, 105, 105P	3055 (Note 3)
58 - 74	8	All	3051
With I.H.C. - Holley Dist.			
56 - 74	4 & 8	w/Ford Pt. Sets 7RA-12171; C9AZ, FAB-12171B; C3AZ, C3DZ, C8AZ, FAA, FAB, FDS-12171 A	3057
64 - 74	4 & 8	w/I.H.C. Pt. Set 361-764-C1	3062
MACK			
49 - 71	6	All 12 volt	3055 (Note 3)
OSHKOSH			
48 - 64	6	All Delco Distributors 12 volt	3055 (Note 3)
48 - 57	6	IAD Dist	3061 (Note 3)
WHITE			
68 - 72	6	w/Holley Dist.	3062
67 - 72	8	w/Holley 1510 Dist.	3062
67 - 72	8	w/Delco Dist.	3051
66 - 69	8	w/Holley D4108A Dist.	3062
49 - 65	6	w/Delco Dist	3055 (Note 3)
60 - 65	8	Lansing Engine 8-235A	
		w/Dist. No. 1111660	3051
		w/Dist. No. 1110632	3050
48 - 62	6	with Holley Distributor	3057
REO		See Diamond T	

LIFT TRUCKS

MAKE & MODEL	CYL.	ENGINE/DIST.	KIT NO.
ALLIS - CHALMERS			
(FP30 & FT-FTL-FTB-FTBL 20-25-30)	4	With FC 133 Wackesha	3
		Before s/n 194791 (Pts. No. 4042731-2)	3054 (Note 3)
		After s/n 194791 (Pts. No. 4056705-9)	3062
FT-FTL-FP-FPL 30-40-50	4	With a/c B153 - After s/n 368558	3054 (Note 3)
F-FL-FP-FPL 30 to 55	4	With a/c G153	3
		Before s/n G56196 (Pts. No. 4042731-2)	3054 (Note 3)
		After s/n G56196 (Pts. No. 4056705-9)	3052
AT- ATL 30-40-50	4	With a/c B153	3
		Before s/n G56196 (Pts. No. 4042731-2)	3054 (Note 3)
		After s/n G56196 (Pts. No. 4056705-9)	3052
(ACC-ACL-ACP-ACPL 20 to 55)	4	All (Pts. No. 4056705-9)	3052
(FT-FTL-FTP-FTPL 60 to 100)	6	After s/n 393705 (Pts. No. 4042731-2)	3055 (Note 3)
FR 150 to 250	6	With a/c G2800 (Pts. No. 4056705-9)	3053
(F-FL-FPL-FC-FLC-60 to 120 AT-ATL-ATM-ATML-AY 60 to 120)	6	Before s/n G56088 (Pts. No. 4042731-2)	3055 (Note 3)
		After s/n G56088 (Pts. No. 4056705-9)	3053
ACC-ACP-60 to 120	6	All (Pts. No. 4056705-9)	3053

MAKE & MODEL	CYL.	ENGINE/DIST.	KIT NO.
CLARK			
"C" Series	4	All w/D155G Waukesha, F-163, Y112 Continental (Execpt C, CY, CFY-20)	3052
C, CY, CFY-20	4	With Y112 Continental	
		w/Screw-on Dist. Cap (Pts. No. 896952)	3052
		w/Clip-on Dist. Cap (Pts. No. 853628)	3054 (Note 3)
C, CF, CY, CFY-30, 40, 50	4	With F162 Continental	
		w/Screw-on Dist. Cap (Pts. No. 896952)	3052
		w/Clip-on Dist. Cap (Pts. No. 853628)	3054 (Note 3)
"C" Series	6	All w/F227, 245 Continental and JXLD Hercules (Pts. No. 896952)	3053
		With F6209, F209 Continental	
		w/Screw-on Dist. Cap (Pts. No. 896952)	3053
		w/Clip on Dist. Cap (Pts. No. 853628)	3055 (Note 3)
"C" Series	8	With 477 V-8 Ford	3056
Clark tor	6	Models 20, 30, 40, 50	3053
IT50, 60N, 60W, 70N, 70W	6	w/Chrysler Industrial 6	3061 (Note 3)
		w/ Chrysler Slant 6	3058
DATSUN			
All	4 & 6	With Single Point Set	3067

Exhibit II

LIFT TRUCKS

MAKE & MODEL	CYL.	ENGINE/DIST.	KIT NO.
EATON YALE & TOWNE			
G3, G5 Series	V-6	All (Pts. Kit No. 5085688)	3053
G51 Series	4	F163 Cont. (Pts. Kit No. 5007938)	3059 (Note 3)
G81, 83, 86 Series	6	Chrys. Slant 6 (Pts. Kit No. 5013230)	3058
G82 Series	4	I.H.C. 135 (Pts. Kit No. 661001)	(Note 1)
[redacted] G86 Series	6	Chrysler Industrial 6	
		With Prest. IAD, IAY Dist. (Pts. Kit No. 661004, 5)	3061 (Note 7)
		With Pts. Kit No. 661001, 6	(Note 1)
(G51, G52, G54; GC - GP Series)	4	With F124 or F162 Continental	(Note 1)
HYSTER			
(S20 - 25 - 30A; H20 - 25 - 30E)	4	Clip-on Dist. Cap (Pts. No. 128821)	3054 (Note 3)
		Screw-on Dist. Cap (Pts. No. 132818)	3052
(S30 - 40 - 50C; P40 - 50A)	4	All (Pts. No. 132818)	3052
H30-40-50-60F	4	W/G-193 Continental	3052
		with 172 Ford engine	3073
H30-40-50-60H	4	All (172 Ford)	3073
Karry Krane	4	Clip-on Dist. Cap (Pts. No.108942A)	3054 (Note 3)
		Screw-on Dist. Cap (Pts. No. 132818)	3052
(S60-70-80-100B; H60-70-80C; H 300A; P60-80A; M 200-300-400H)	6	Clip-on Dist. Cap (Pts. No. 128821)	3055 (Note 3)
		Screw-on Dist. Cap (Pts. No. 132818)	3053
(S125 - 150A; H 110 - 130 - 150F; H 150 - 165 - 180 - 200 - 225 - 250E; H 360 - 400 - 460 - 520 - 620B; P125-150-165-180A)	6	All (Pts. No. 132818)	3053
PETTIBONE - MERCURY			
(GS, GA-30H, 40, 50; GS4-20, 25, 30; 20, 25, 30 GS4; 30, 40, 50GS, GA)	4	All (Pts. No. 195-4557)	3052
460	4	172 Ford Industrial	3073
(GS, GSA-60; CLA-7; GSO, GA-60, 70, 80; 60, 70GS, GSO, GA; 80 GSO, GA; 100, 120 GA)	6	All (Pts. No. 195-4557)	3053
GS, GA-100, 120	6	All (Pts. No. 185-5720)	3055 (Note 3)
GS, GA-150, thru 225	6	All (Pts. No. C9AZ-12171-B)	3057
950 H	6	With Chrylser Indus. 6 cyl.	3061 (Note 3)
		with 250 Ford (Pts. No. C9AZ-12171-B)	3057
All others	4	W/Delco Dist. (Clip-on Cap) Pts. No. 185-5720	3054 (Note 3)
	6	" " " " " " " " "	3055 (Note 3)
	4	W/Delco Dist. (Screw-on Cap) Pts. No. 195-4557	3052
	6	" " " " " " " " "	3053
TOWMOTOR			
540	4	After s/n 610056 (Pts. No. 6374030, 5M4032)	3054 (Note 7) 3
600	4	After s/n 610008 (Pts. No. 6374030, 5M4032)	3054 (Note 7) 3
(392S, 422S, 462S, 502S, P, 510P, 601P)	4	All (Pts. No. 81847)	3059 (Note 7) 3
V & T Series	4	W/Dist. 98655, 301989 (Pts. No. 321458, 81807)	3052
		W/Dist. 328709 (Pts. No. 81841)	3059 (Note 7) 3
390, 391	6	All (Pts. No. 21796)	3061 (Note 7) 3
LT 60	6	After S/n 51294 (Pts. No. 21796)	3061 (Note 7) 3
LT 62	6	" " 51206 " " "	3061 (Note 7) 3
LT72	6	" " 5181 " " "	3061 (Note 7) 3
LT 90	6	" " 5126 " " "	3061 (Note 7) 3
540	6	Before S/n 610055 (Pts. No. 21796)	3061 (Note 7) 3
600	6	" " 610008 " " "	3061 (Note 7) 3
670	6	" " 610016 " " "	3061 (Note 7) 3
680P	6	" " 610120 " " "	3061 (Note 7) 3
750S	6	" " 660019 " " "	3061 (Note 7) 3
670	6	After S/n 610017 (Pts. No. 6374030, 5M4032)	3055 (Note 7) 3
680P	6	" " 610121 " " " "	3055 (Note 7) 3
750S	6	" " 660020 " " " "	3055 (Note 7) 3
760P, 860P, 960P	6	All (Pts. No. 321458, 81807)	3053
V100 - 300	6	Ford 6 cyl.	3057
	8	Ford 8 cyl.	3056
LT,300, 400, 500 Series	4 & 6	All not listed above	(Note 1) NOTE 2
TOYOTA			
All	4 & 6		3068
WHITE MOBILIFT (MINNEAPOLIS MOLINE)			
(MA-30 thru 60 & WC-30, 40, 50)	4	W/Prestolite IBT Dist. (Pts. No. 35P1449)	3059 (Note 3)
MY-100 thru 300	6 & 8	W/Chryster Slant 6 or V-8	3058
All Others	4	W/Prestolite IBT Dist. (Pts. No. 35P1449)	3059 (Note 3)
	6	" " " " " "	3060 (Note 3)
	6	W/Prestolite IAD, IAY Dist.	3061 (Note 3)
	4	W/Delco - Remy Dist. (Clip-on Cap)	3054 (Note 3)
	6	" " " " " "	3055 (Note 3)
	4	W/Delco-Remy Dist. (Screw-on Cap)	3052
	6	" " " " " "	3053
	4 & 6	Prestolite IGW Dist., or any other not listed above	(Note 1) NOTE 2

TRACTOR & FARM EQUIPMENT

MAKE & MODEL	CYL.	ENGINE/DIST.	KIT NO.
ALLIS - CHALMERS			
(D 10, 12, 14, 15; RT-40, 50; H3 Crawler Tractor; Combine E, "E" III)	4	All	3054 (Note 3)
TL-10, 12	4	Delco Dist. W/clip-on Cap	3054 (Note 3)
	6	" " " " "	3055 (Note 3)
(D-17, 19; TL-14, 16; Combine A, B, C; RT-60, 70, 80, 100)	6	All	3055 (Note 3)
Combine F	6	Delco Dist. W/Clip-on Cap	3055 (Note 3)
		Delco Dist. W/Screw-on Cap	3053
(170, 180, 190, 190XT Trac.; TL-545 Tractor Loader; EIII, K Combine)	6	All	3053
Combine G	6	Delco Dist. W/Clip-on Cap	3050
		Delco Dist. W/Screw-on Cap	3053
Combine L, M	6	All	3050
~~All Others~~			~~(Note 1)~~
JOHN BEAN			
40RC, 300 G Rotomist	6	IAD Prestolite Dist.	3061 (Note 3)
~~All Others~~			~~(Note 1)~~
JOHN BLUE			(Note 1)
J. I. CASE			
(200B thru 600B, 310, 420 (G148 Eng.))	4	1111908, 909 Dist.	3054 (Note 3)
900 LPG	6	Prestolite IAD Dist	3061 (Note 3)
~~All Others~~			~~(Note 1)~~
CA[redacted]LLAR			
[redacted]nental Engine	4	Prestolite IBT Dist.	3059 (Note 3)
COCKSHUTT, CO-OP			
430, 31, 535, 42, 45	6	Chrysler 251, 265 Engine	3061 (Note 3)
540, 550	4	Delco Dist. Only	3054 (Note 3)
570	6	Delco Dist. Only	3055 (Note 3)
All Others			(Note 1)
JOHN DEERE			
(215A Windrower; JD 301, 310, 380, 400, 410, 440, 480, 1520, 2020, 2030 Series; 2510, 2520 Tractors; 323 Baler; 266, 600 Hi-Cycle; 40, 45 Combine; JD-350B Crawler)	4	All	3059 (Note 7) 3
1010, 2010 Tractors	4	Prestolite IBT Dist.	3059 (Note 7) 3
		Delco Dist. W/Clip-on Cap	3054 (Note 7) 3
40, 45 Combine S.P.	4	All	3054 (Note 7) 3
3010 Tractor	4	Delco Dist. W/Clip-on Cap	3054 (Note 7) 3
		Delco Dist. W/Screw-on Cap	3052
(500, 3020 Tractor; 500C Loader)	4	All	3052
105 Combine	4	Delco Dist W/Clip-on Cap	3054 (Note 7) 3
	6	" " " " "	3055 (Note 7) 3
	6	Delco Dist W/Screw-on Cap	3053
	6	Prestolite IBT Dist.	3060 (Note 7) 3
(12 Harvester; 99, 299 Cotton Picker)	6	All	3060 (Note 7) 3
55, 65, 95 Combine	6	Prestolite IBT Dist.	3060 (Note 7) 3
		Delco Dist. W/Clip-on Cap	3055 (Note 7) 3
(55 Combine S.P.; No. 8 Cotton Picker; Cotton Picker (NA-217)]	6	All	3055 (Note 7) 3
4010 Tractor	6	Delco Dist. W/Clip-On Cap	3055 (Note 7) 3
		Delco Dist. W/Screw-on Cap	3053
(600, 4020 Tractor; 4400, 6602, 7700 Combine; H7 Forage Harvester; 155 Self-Propelled Harvester)	6	All	3053
~~All Others~~			~~(Note 1)~~
FORD			
(620, 30, 40, 50, 60; 740; 820; 860; 950; 960, 2000, 4000 Series)	4	W/FAC-12127D Dist Only	3073
Super Major 5000	4	All	3056
S.P. Combine & 6000 Series	6	All	3057
~~All others~~			~~(Note 1)~~

Exhibit II

TRACTOR & FARM EQUIPMENT

MAKE & MODEL	CYL.	ENGINE/DIST.	KIT NO.
~~FORDSON~~			~~(Note 1)~~
~~J.A. FREEMAN~~			~~(Note 1)~~
~~FRIEND~~			~~(Note 1)~~
~~GRAVELEY TRACTORS~~			~~(Note 1)~~
~~HAGIE~~			~~(Note 1)~~
~~HAHN~~			~~(Note 1)~~
~~HARDIE~~			~~(Note 1)~~
~~HARRINGTON~~			~~(Note 1)~~
~~HARVESTER IMPLEMENT~~ ok			
98 Harvester	6	GO-339A Eng.	3055 (Note 3)
~~HESSTON~~			~~(Note 1)~~
INTERNATIONAL HARVESTER			
(C-175, C-200 Tractor; C-157 World Engine)	4	Prestolite IBT Dist.	3059 (Note 3)
(TD-6, 9; HA Payloader; HAH-F Payloader)	4	Delco Dist.	3054 (Note 3)
C-263, 301	6	Prestolite IBT Dist.	3060 (Note 3)
TD-18A, 24	6	Delco Dist.	3055 (Note 3)
~~All Others~~			~~(Note 1)~~
KAISER			
FJ, F4-134, L4-134	4	IAT Dist. only	3059 (Note 3)
6-230, L6-226	6	All	3060 (Note 3)
~~All Others~~			~~(Note 1)~~
~~KROMER~~			~~(Note 1)~~
~~LUNDELL~~			~~(Note 1)~~
MASSEY - FURGUSON			
(TD-20, 30, 35; TO-35; MF-85, 90; MH-50; AHO Power Unit; 35S.P. Combine; 44 Windrower; 34 Swather)	4	All	3054 (Note 3)
(MF 50, 65, 202, 204, 356 Industrial Tractor; 35)	4	Delco Dist w/Clip-on Cap Delco Dist w/Screw-on Cap	3054 (Note 3) 3052
(35 Spec.; MF-135, 150, 165, 175, 180, 285, 2135, 2200, 2250, 3165; MF36 Swather)	4	All	3052
MF-410,1100	6	All	3053
92 S.P. Combine	6	All	3055 (Note 3)
(60, 70, 72, 80, 82, 90, 92, S.P. Combine; MF-300 S.P. Combine; MF-205 Combine; Corn Picker, Forager S.P.)	6	All	3061 (Note 3)
48 Haypacker	6	All	3060 (Note 3)
MF-510 S. P.Combine	8	All	3050
~~All Others~~			~~(Note 1)~~
~~McCORMICK - DEERING~~			~~(Note 1)~~
MERCURY MFG.			
A 460 (FC 278 Eng.)	4	625-5 Dist.	3054 (Note 3)

MAKE & MODEL	CYL.	ENGINE/DIST.	KIT NO.
MINNEAPOLIS - MOLINE			
(UBE, UBN, UTC, UTI, UTIL, UTS, UTU, GB, GBD, GTB, GTC, ZAS, ZBE, ZBN, ZBU; Uni-Tractor; Harvester G-4; B-4; 445, 550; 4 Star; 4 Star Super; 5 Star; Jet Star; M5; M602 Trac.)	4	All	3054 (Note 3)
Jet Star 3; U-302 Tractor	4	Delco Dist. w/Clip-on Cap Delco Dist. w/Screw-on Cap	3054 (Note 3) 3052
(M670 Tractor; 11-302; Eng. 336-4A, HD-220-4A	4	All	3052
G-704, 5, 6, 7, 8, 900	6	All	3055 (Note 3)
(G 900, 1000 Tractor; Eng. HD-425A-6A, HD-504A-6A, HD-605B-6A, HD-800-6A)	6	All	3053
(2890; 3490, 96; 4290, 92, 96 Combine)	6	All	3061 (Note 3)
All Others			~~(Note 1)~~
MYERS			
Chry. Ind. 30	6	Prestolite IAD Dist.	3061 (Note 3)
All Others			~~(Note 1)~~
NEW HOLLAND			
800, 810 Forage Harvester	6	Prestolite IAD Dist.	3061 (Note 3)
All Others			~~(Note 1)~~
OLIVER			
Tractors			
248, 283, 310 Eng.	6	Holley Dist.	3057
OV-235	8	Holley Dist.	3057
1600	6	Oliver Dist.	3053
1800	6	w/Screw-on Dist. Cap w/Clip-on Dist. Cap	3053 3055 (Note 3)
(77, 88, 770, 880; Super 950; HC; DG)	6	w/Clip-on Dist. Cap	3055 (Note 3)
55, 66, 550	4	w/Clip-on Dist. Cap	3054 (Note 3)
(430, 431 Rice Comb.; 525, 535, 542, 545)	6	Prestolite IAD Dist.	3061 (Note 3)
~~All Others~~			~~(Note 1)~~
OWATONNA			~~(Note 1)~~ 3
POLAND			~~(Note 1)~~ 3
UNIVERSAL			~~(Note 1)~~ 3
WILLYS			
L6-226 Engine	6	IAT 4404A Dist.	3060 (Note 3)
		IAT-42068 Dist.	3061 (Note 3)
6-230 Engine	6	IAT-4416 Dist.	3060 (Note 3)
6-232 Engine	6	All	3053
V-8-327 Engine	8	All	3051
WISCONSIN			
4 cyl. Delco Remy	4	w/Clip-on Dist. Cap	3054 (Note 3)
~~All Others~~			~~See (Note 1)~~

GENERAL GUIDE FOR AMERICAN BUILT ENGINES USED IN LIFT TRUCKS, FARM EQUIPMENT, AND INDUSTRIAL APPLICATIONS

DISTRIBUTOR MODEL	CYL.	O.E.M. POINT SET NOs.	KIT NO.
AUTO-LITE (PRESTOLITE)			3
IBT	4	1-33, 1-47	3059 (Note 3)
IBT	6	" "	3060 (Note 3)
IAD, IAY	6	1-15, -20, -22, -45, -48	3061 (Note 3)
Chrysler	Slant 6 & V-8	Chrys. No. 2098244, 2299322, 2421173	3058
DELCO - REMY			3
Clip-on Dist. Cap	4	D-105, -105P, -100, -111	3054 (Note 3)
	6	" " " "	3055 (Note 3)
Screw-on Dist. Cap	4	D-108P	3052
	6	"	3053
w/o Adjust. Window	8	D-103, -103P, -104, -104P	3050
w/Adjust. Window	8	D-106P, -106PS, -112P, -1007	3051
12 cylinder dist.	12	Dist No. 1111663-76-88	3072

DISTRIBUTOR MODEL	CYL.	O.E.M. POINT SET NOs.	KIT NO.
FOMOCO			
172 Indus. Eng. Dist.	4	C9AZ-12171-B	3073
All	6	" "	3057
All single point set	8	C5AZ-12171-A	3056
HOLLEY			
	4, 6 & 8	76D-711A (I.H.C. No. 361-764-C1) only	3062 (Note 3)
All other	4, 6 & 8		

*** This is a general guide to engine distributors of American manufacture. The adapter kits will "in most cases" fit the distributors. In some cases a slight modification of the adapter plate or relocation of the trigger mounting holes will be required. Refer to instruction sheet included with system for positioning of trigger unit.**

APPLICATION GUIDE NOTES

Notes 1 through 4 will be elliminated per your request. C Howe 7-1-76

~~NOTE 1 - There is no adapter kit available at this time, however the unit may be installed in the distributor by drilling two holes in the distributor advance plate. All basic hardware and instructions necessary to do this are included with the basic ignition system kit.~~

~~NOTE 2 - On some 4 cylinder cars, it may be necessary to grind the distributor cam lobes slightly to allow the trigger to properly sense the lobe. This is covered in the basic ignition system instructions included with the basic ignition system kit.~~

~~NOTE 3 - On vehicles with breakertype CD ignition, it will be necessary to remove the complete old system, and replace with WC.~~

~~NOTE 4 - This kit permits operating the Western Controls CD Converter unit with the original equipment breakerless distributor. Refer to Western Controls Ignition System brochure DS-551-300 for details.~~

NOTE 1 - If vehicle has an original equipment series tachometer, a 1052 (High Performance) or 1054 (High Performance with limiter) system is recommended to prevent limiting at lower than desired engine RPM.

NOTE 2 - Contact your dealer for availablity.

NOTE 3 - Adapter kit is only for distributors having no vacuum advance.

NOTE 4 - Makes and models of vehicles marked with *asterisk are <u>not</u> exempt from prohibition in the state of California when the vehicle is used on the highway. This prohibition applies to all Chrysler Engines, General Motors (Delco) 4 cylinder and 6 cylinder engines.